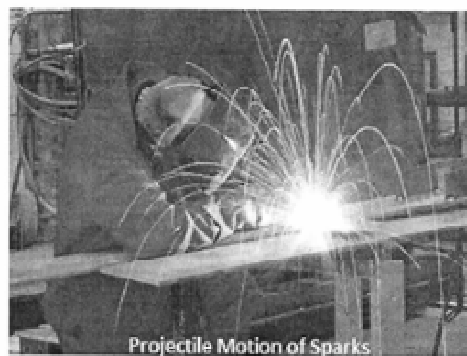
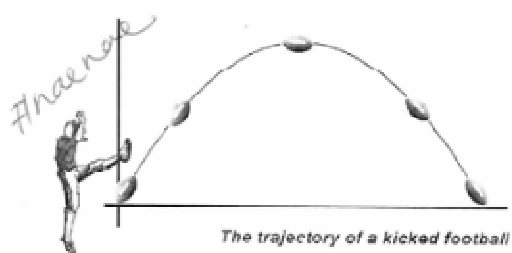
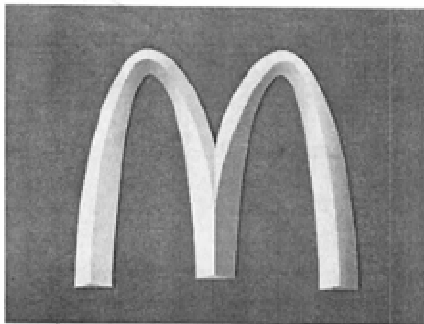
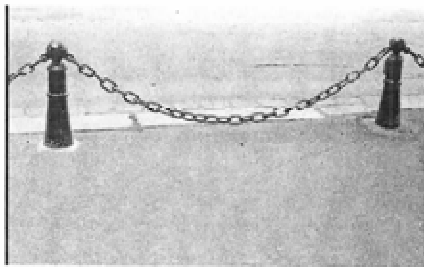
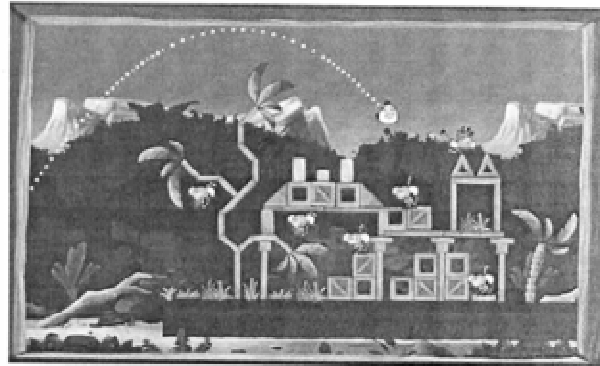
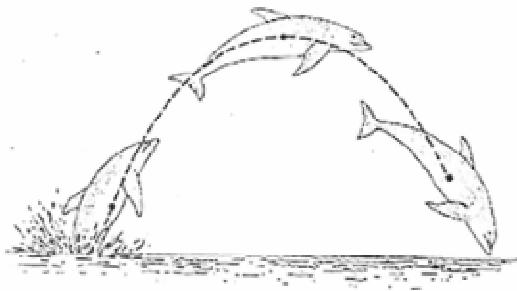


PARABOLAS ARE EVERYWHERE!!!!



05/13/14 Agenda

- Check Homework
 - Quadratics in the Real World
- Chapter 9 - Quadratic Functions & Equations
 - More Real World Applications

Wednesday - Thursday - Review

Friday - Test on Chapter 9

Homework

- Finish the Notes Worksheet

Scenario:

It's game day! The Chicago Bears are playing against the Miami Dolphins. The score is tied 35-35 with 45 seconds left on the clock. Robbie Gould kicks the football. It soars high into the air, following the path of the equation $h = -0.83t^2 + 7.5t$ where h is height in feet, and t is time in seconds.

Equation: $h = -0.83t^2 + 7.5t$

Axis of Symmetry: $a = -0.83$ $b = 7.5$

$$-\frac{b}{2a} = \frac{-7.5}{2(-0.83)} = \frac{-7.5}{-1.66} = 4.5181$$

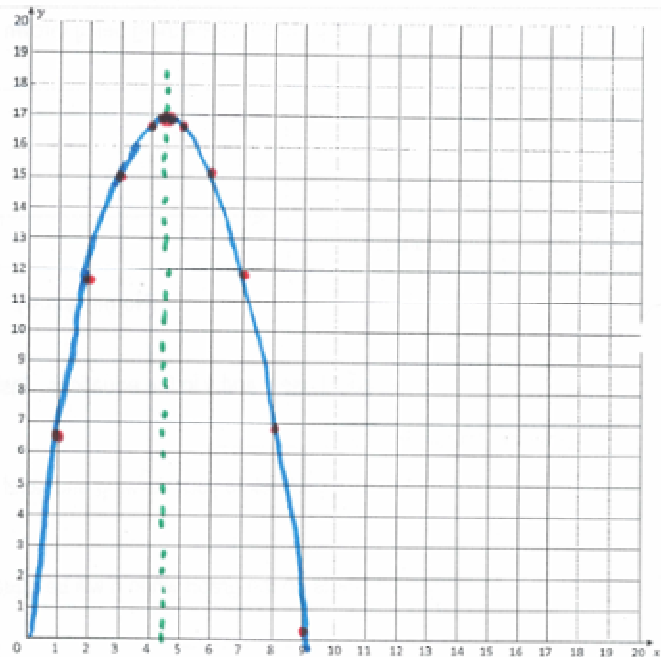
Vertex: $(4.5, ?)$ $(4.5, 16.94)$

$$y = -0.83(4.5)^2 + 7.5(4.5)$$

$$= 16.94$$

t	h
1	6.67
2	11.68
3	15.03
4	16.72
5	16.75
6	15.12
7	11.83
8	6.88
9	1.27

Sketch the graph:



Analysis Questions:

- What are the zeros (solutions)? $x = 0$ $x = 9.0361$
- When will the ball hit the ground? AFTER 9.0361 SECONDS
- Why are there no negative x-values? TIME CAN'T BE NEGATIVE
- After how many seconds will the ball reach its highest point? 4.52 SECONDS

Scenario:

There is outrage in Beliberland. Teenage girls everywhere are furious over the delay in Justin Bieber's new album release. While some have gone into shock, others are rioting. In Hollywood, a group of hooligans went to Bieber's house, and decided to see how far they could throw him. With a heave ho, the teenagers threw poor Justin in a path that followed the equation: $h = -0.256t^2 + 4t$, where h is height in feet, and t is time in seconds.

Equation:

$$h = -0.256t^2 + 4t$$

Axis of Symmetry:

$$\frac{-b}{2a} = \frac{-4}{2(-.256)} = \frac{-4}{-.512} = 7.8125$$

Vertex:

$$(7.8, 15.63)$$

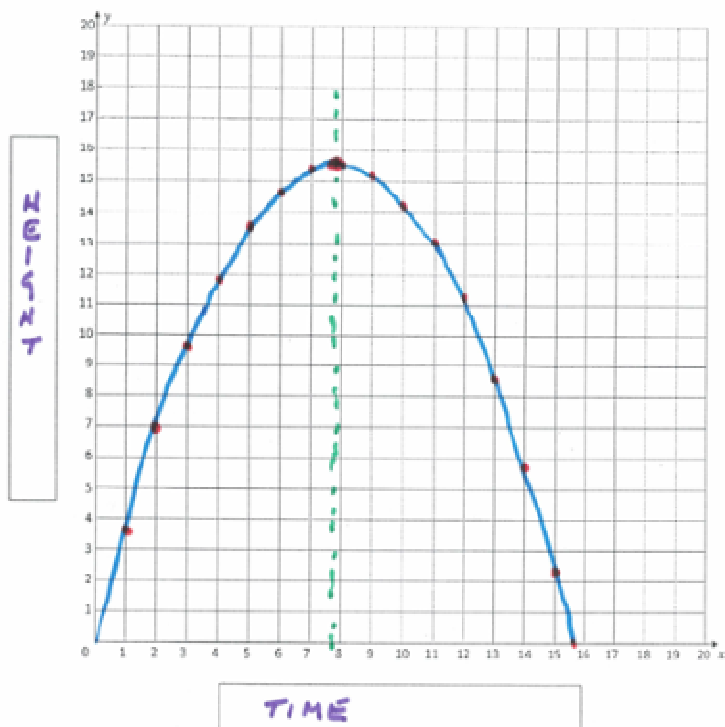
$$y = -.256(7.8)^2 + 4(7.8)$$

$$= 15.625$$

t	h
1	3.74
3	9.7
5	13.6
7	15.46
9	15.26

11 13.02
13 8.74
15 2.40

Sketch the graph:



Analysis Questions:

5. What are the zeros (solutions)? $x = 0$ $x = 15.6$
6. How many seconds did his body fly in the air? 15.6 SECONDS
7. How many seconds until he will reach his highest point? 7.81 SECONDS
8. What was the height of Bieber when he reached his highest point? 15.6 FEET
9. Will he ever reach a height of 20 feet? NO